LOGIQ P5

TruScan Imaging Technology

GE Medical Systems – Americas: 888-202-5528
P.O. Box 414, Milwaukee, Wisconsin 53201 U.S.A.
GE Ultrasound - Europe: +49-212-28020
P.O. Box 1105 60 D-42665 Solingen
GE Ultrasound - Asia: 65-291-8528
Singapore: 298 Tiong Bahru Road, #15-01/06
Tiong Bahru Plaza, Singapore 168730
Internet: http://www.gemedicalsystems.com

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Product Description

The LOGIQ® P5 is a high performance, highly mobile and easy to use multipurpose color Doppler Ultrasound imaging system designed for Obstetrical, Gynecological, Cardiac, Musculoskeletal, Vascular, Urological, Small Parts, Superficial, Pediatric, Neonatal, Transcranial, Abdominal and other applications.

System Architecture

TruScan™ Architecture – GE's innovative, software-intensive platform provides exceptional computational power, image-manipulation capabilities, real time 4D capabilities, workflow flexibility and product upgradeability.

TruAccess is the GE advanced, raw-data processing technology that has helped transform ultrasound imaging. By accessing raw data, TruScan achieves excellent image quality and ensures exceptional image management capabilities.

SmartScan utilizes new advances in operating algorithms and system operations to aid in improving image acquisition and patient throughput while helping to increase diagnostic confidence and exam consistency.

ComfortScan, our advanced user-friendly designed software suite helps to maximize productivity. It simplifies every exam you perform.

General Specification

Dimensions and Weight

- Height: 135/141 cm
- Width: 43cm
- Depth: 64cm
- Weight: approx. 75 kg (165 lb.)

Electrical Power

- Voltage: 100-120Vac or 220-240Vac
- Frequency: 50/60 Hz
- Power: Max. 750 VA with Built-in and On-Board Peripherals
- Maximum Thermal Output: 2200 BTU/hr.

Console Design

- 2 Active Probe Ports
- Integrated HDD (Capacity: 160GB)
- Integrated DVD-R/W Drive
- On-board Storage for Peripherals (Max 3 peripherals)
- Wheels
  - Wheel diameter: 12.5cm
  - Integrated locking mechanism that provides rolling lock and optional caster swivel lock
- Probe Holders, Removable for Cleaning and Washing
- Gel Holder, Removable for Cleaning and Washing
- Air Filters, Easily Removable
- Front Handle
- Rear Handle (Option)
- Drawer (Option)
- Probe Cable Hanger (Option)
- Urology Probe Holder (Option)

User Interface

Operator Keyboard

- Keyboard Width: 43cm
  Keyboard Height: 84cm
- Alphanumeric Keyboard
- Ergonomic Hard Key Operations
- Indicator Lights Identify Activated Keys
- Integrated Recording Keys for Remote Control of Up to 2 Peripheral Devices and DICOM Devices
- 8 TGC Pods, with Re-mapping Functionality at Any Depth

Monitor

- 15 inch TFT LCD
- XGA Format:
  - Display size: 1024 x 768
  - Recording area: 800 x 600
- Adjustable Tilt/Swivel
- Digital Brightness/Contrast Adjustment

System Overview

Applications

- Abdominal
- Obstetrical
- Gynecological
- Cardiac
- Musculoskeletal
- Vascular
- Urological
- Small Parts and Superficial
- Pediatric and Neonatal
- Transcranial

Scanning Methods

- Electronic Sector
- Electronic Convex
- Electronic Linear
- Mechanical Volume Sweep

Transducer Types

- Sector Phased Array
- Convex Array

- Microconvex Array
- Linear Array
- Doppler Pencil
- Bi-plane Microconvex Array
- Real time 4D volume probes

Operating Modes

- B-Mode
- M-Mode
- Anatomical M Mode (option)
- Color Flow Mode (CFM)
- Power Doppler Imaging (PDI) with Directional Map
- PW Doppler with High PRF
- Crossbeam (option)
- SRI (option)
- B-Flow (option)
- Steered CW Doppler (option)
- Dedicated CW Doppler (option)
- Coded Contrast Imaging (option)
- 3D/4D Volume Modes (option)

System Standard Features

- Hard Disk for image storage
  - Without compression:
    - Raw DICOM: HDD capacity 33.000 images
    - DICOM:
      - Image Only: HDD capacity 71.000 images
- CINE Memory Frames (60 sec) (192MB) >1000 depending on probe, imaging depth, line density and field of view
- Real-time Triplex Mode at any Depth and PRF
- Automatic Optimization
  - Auto Tissue Optimization: ATO
  - Auto Spectrum Optimization: ASO
  - Auto Color Optimization: ACO
- Coded harmonic Imaging
- Coded Excitation
- Virtual Convex
- Patient Information Database
- Image Archive on Hard Drive and DVD
- Easy Backup for Media
- Report Designer
- Vascular Calcs
- Cardiac Calcs
- OB Calcs
- Fetal Trending
- Multi Gestational Calcs
- Hip Dysplasia Calcs
- Gynecological Calcs
- Urological Calcs
- Renal Calcs
- Real-time Auto Doppler Calculations
- TruAccess, Raw Data Processing
- MpegView
- Key Macro
- Network Storage
- Auto Focus
- Wide Field of View on convex
- Simultaneous Display on BE9CS probe
- Quick Save
- B-Steer
- Virtual Convex with X-Beam
- ED Report

System Options

- DICOM 3.0 Connectivity
- ECG
- Coded Contrast Imaging
- CW Doppler
- Anatomical M-Mode
- LOGIQView
- Crossbeam
- SRI
- B-Flow
- Easy 3D (Baby Face, Vascular)
- Advanced 3D, with 3D Landscape
- Real time 4D
- 3rd. probe port
- Flexible Monitor Arm
- 3-Pedal Foot Switch, with Programmable Functionality
- Rear Handle
- Drawer
- Probe Cable Hanger
- Urology Probe Holder
- 1-Pedal Foot Switch
- Remote Control Switch
- PDF report conversion

Media & Peripheral Options

- Integrated Mounting Kits and Remote Controls Provided for
  - B/W Digital thermal printer
  - Color Digital thermal printer
  - DVD Video Recorder

Display Modes

- Live and Stored Display Format: Full size and split screen - both w/ thumbnails. For Still and CINE
- Review Image Format: 4x4, and "thumbnails". For Still and CINE
- Simultaneous Capability
  - B/PW
  - B/CFM or PDI
  - B/M
  - B + CFM/M
  - Realtime Triplex Mode (B + CFM or PDI/PW)
  - B-Flow + PW (option)
- Dual B (B/B)
  - Dual B + CFM or PDI
- Selectable Alternating Modes
  - B/M
  - B/PW
  - B + CFM/M
  - B + CFM (PDI)/PW
  - 3D – Mode
  - 3D – Color Mode (option)
  - B/CW (option)
  - B + CFM (PDI)/CW (option)
- Multi Image Split Screen
  - Live and/or frozen
  - B + B/CFM or PDI
  - Independent CINE playback
  - Quad screen format
- Zoom: Write/Read/Pan
- Colorized Image
  - Colorized B
  - Colorized M
  - Colorized PW
  - Colorized CW (option)
- Time line Display
  - Independent Dual B/PW Display

Display Formats:
Top/ Bottom selectable format (Size: 1/2:1/2; 1/3:2/3; 2/3:1/3)
Side/Side selectable format (1/2:1/2; 1/3:2/3; 0:1)
Switchable after freeze

Display Annotation

- Patient Name: First, Last, & Middle name each store 27 characters. Up to 62 total characters displayed.
- Patient ID: 31 characters. Up to 27 total characters displayed.
- Age, Sex and Birth Date (optional)
- Hospital Name: 23 characters.
- Date: 3 Types selectable MM/DD/YY, DD/MM/YY,
- YY/MM/DD
- Time: 2 types selectable
- 24 hours, 12 hours
- Gestational Age from LMP/EDD/GA/BBT
- Probe Name
- Gray Map names
- Probe Orientation
- Depth Scale Marker
- Lateral Scale Marker
- Focal Zone Markers
- Image Depth

- Zoom Depth
- B-Mode
  - Gain
  - Dynamic Range
  - Imaging Frequency
  - Edge Enhance
  - Frame Averaging
  - Gray Map
  - ATO On/Off
- M-Mode
  - Gain
  - Dynamic Range
  - Time Scale
- Doppler Mode
  - Gain
  - Angle
  - Sample Volume Depth and Width
  - Wall Filter
  - Velocity and/or Frequency Scale
  - Spectrum Inversion
  - Time Scale
  - PRF
  - Doppler Frequency
- Color Flow Mode
  - Line Density
  - Frame Averaging
  - Packet Size
  - Color Scale
  - Color Velocity Range and Baseline
  - Color Threshold Marker
  - Color Gain
  - PDI
  - Color Scale Inversion
  - Color Doppler Frequency
- TGC Curve
- Acoustic Frame Rate
- Cine Frame Number
- VCR Counter
- VCR Status
- VCR Playback Counter
- Body Pattern
- Application Name
- Measurement Results
- Operator Message
- Displayed Acoustic Output
  - TIS: Thermal Index Soft Tissue
  - TIC: Thermal Index Cranial (Bone)
  - TIB: Thermal Index Bone
  - MI: Mechanical Index
- % of Power output
- Biopsy Guide Line and/or Zone
- Heart Rate

General System Parameters

System Setup

- Pre-programmable Categories
- User Programmable Preset Capability
- Factory Default Preset Data
- Languages: English, French, German, Spanish, Italian, Portuguese, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian, Japanese, Chinese
- OB Report Format: 5 Types, Tokyo Univ., Osaka Univ., USA, Europe, and ASUM
- EFBW: 10 types, Japan, USA and Europe (Tokyo Univ., Osaka Univ., Tokyo Shinozuka, JSUM, German, Shephard, Merz, Hadlock/Shephard, Williams, Brenner)
- 348 Pre-defined Annotations and User Programmable Libraries/Annotations
- Body Patterns: 140 human types plus 14 animal types
- Customized Comment Home Position

Complete User Manual available on board through Help (F1)

User Manual and Service Manual are included on CD with each system. A printed Manual is available upon request.

CINE Memory/Image Memory

- CINE Memory: 192MB
- Dual Image CINE Display
- Quad Image CINE Display
- CINE Gauge and CINE Image Number Display
- CINE Review Loop
- CINE Review Speed: 20 steps (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000%)
- Selectable CINE Sequence for CINE Review
- Measurements, Calculations and Annotations on CINE Playback
- Scrolling Timeline Memory
- Cine Capture Function

Image Storage

- On-board database of patient information from past exams
- Storage Format: DICOM/Raw Data
- DICOM Still Image Storage Size:
  - Gray Image: ~300K to ~1.3 MB
  - Color Image: ~900K to 1.9 MB
- Multiframe
- Display Format: Full size, 4x4, and "thumbnails"
- Live image and stored image side-by-side display
- CD-R storage: 650, 700 MB
- DVD storage: -R 4,7GB
- Conversion to JPEG, AVI (SaveAs) and WMV (MPEGvue) file formats
- Internal Hard Drive Image Storage: 50 GB
- External USB 2.0 Hard Drive support for Import, Export, DICOM Read, SaveAs and MPEGVue
- USB 1.1 / 2.0 Memory Stick support for SaveAs and MPEGVue
- Network Storage support for Import, Export, DICOM Read, SaveAs, MPEGVue

Connectivity

- Ethernet network connection
- RS-232 serial data output (need a converter cable)
- DICOM 3.0 (option)
  - Verify
  - Print
  - Store
  - Modality Worklist
  - Storage Commitment
  - Modality Performed Procedure Step (MPPS)
  - Media Exchange
  - Off network / mobile storage queue
  - Query/Retrieve; supported on Centricity and other compatible vendors
  - Structured Reporting; compatible with LOGIQworks
  - Public SR Template
  - Media Store of SR
  - iLinq capability

Scanning Parameters

- Digital Beamformer
- 2560 processing channels
- Frame Rate: > 700 depending on preset
- Displayed Imaging Depth: 0 – 30 cm
- Minimum Depth of Field: 0 –2cm (probe dependent)
- Maximum Depth of Field: 0 – 30 cm (probe dependent)
- Transmission Focus
  1 – 8 Focus Points selectable (probe and application dependent)
- Continuous Dynamic Receive Focus/Aperture
- Multi-Frequency/Wideband Technology
- Frequency Range 1 to 15MHz
- 256 Shades of Gray
- Up to 197 db processing dynamic range
- 16,777,216 Hues of Color

- Adjustable Field of View (FOV) up to 170 degree depending on probe
- Image Reverse: Right/Left
- Image Rotation: 4 steps
  Rotation: 0°, 90°, 180°, 270°

B-Mode

- B/M Acoustic Output: 0 – 100%, 2% step
- Image Reverse: On/Off
- B Color: 10 types
- Thermal Index: TIC, TIS, TIB
- Softener: 4 steps
- Focus Number: 8 steps
- Focus Width: 3 types
- Range Focus: On/Off
- Compression: 0.5 – 1.5, 0.1 step
- Line Density: 4 steps
- Line Density Zoom: 4 steps
- Suppression: 6 steps
- Frame Average: 8 steps
- Edge Enhance: 6 steps
- Scanning Size (FOV or Angle): probe dependent, see probe specifications
- Gray Scale Map: 23 types
- Clear Map: 23 types
- Tint Map: 10 types
- Gain: 0 – 98 dB, 2 dB step
- Dynamic Range: 30 – 120 dB, 3 dB step
- Depth: 1 – 30 cm, 1 cm step, depend on probe.
- Rejection: 6 steps
- Frequency: Up to 5 steps, depend on probe

- Auto Line Density: On/Off pre-settable
- Steered Linear: +/- 15°

Color Flow Mode

- Base Line: 0 – 100 %, 10 % step
- Invert: On/Off
- CF/PDI Focus Depth: default pre-settable for 0 – 100 % of ROI in depth, 10 % step
- CF/PDI Flash Suppression: 2 steps
- CF/PDI Acoustic Output: 0 – 100%, 10% step
- CF/PDI Angle Steer: 0, +/- 20°
- Packet Size: 5 – 16, dependent on probe/application
- Line Density: 5 steps
- Line Density Zoom: 5 steps
- Frame Average: 7 steps
- PRF: 280 Hz – 19600 Hz
- Spatial Filter: 6 steps
- Gain: 0 – 40 dB, 0.5 dB step
- Wall Filter:4 steps depend on probe/application
- Scanning Size (FOV or Angle): probe dependent
- CF/PDI Vertical Size (mm) of ROI: default pre-settable
- CF/PDI Center Depth (mm) of ROI: default pre-settable
- CF/PDI Frequency: Up to 3 steps, depend on probe
- Color Map: 20 types depend on application
- Transparent: 5 steps
- Color Threshold: 0 – 100 %, 5 % step
- Auto Line Density: On/Off pre-settable
- PW/CF Ratio: 1, 2, 4
- Accumulation: 8 steps

Power Doppler Imaging

- PDI Map: 13 types
- CF/PDI Flash Suppression: 2 steps
- CF/PDI Focus Depth: default pre-settable for 0 – 100 % of ROI in depth, 10 % step
- CF/PDI Acoustic Output: 0 – 100%, 10% step
- CF/PDI Angle Steer: 0, +/- 20°
- Packet Size: 5 – 16, dependent on probe/application
- Spatial Filter: 6 steps
- Frame Average: 7 steps
- PRF: 280 Hz – 19600 Hz
- Power Threshold: 0 – 100 %, 5 % step
- Gain: 0 – 40 dB, 0.5 dB step
- Wall Filter: 7 steps depend on probe/application
- CF/PDI Frequency: Up to 3 steps, depend on probe
- Auto Line Density: On/Off pre-settable
- Transparent: 5 steps
- Invert: On/Off
- Accumulation: 8 steps

M-Mode

- Sweep Speed: 8 steps
- M Color: 10 types
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TL only
- B/M Acoustic Output: 0 – 100 %, 2 % step
- Rejection: 6 steps
- Dynamic Range: 30 – 120 dB, 3 dB step
- Edge Enhance: 6 steps
- Gray Scale Map: 23 types
- Clear Map: 23 types
- M Gain: 0 – 98 dB, 2 dB step

Anatomical M-Mode

M-mode cursor adjustable at any plane
Can be activated from a CINE loop from a live or stored image
Available with Color Flow Mode
M & A capability

PW/CW-Mode

- Maximum and Minimum Velocity Scales
  - Max: 10 m/sec
  - Min: 5 cm/sec
- Gray Scale Map: 4 types
- Dynamic Range: 24 – 60, 4 dB step
- Base Line: 5 – 95 %, 11 steps
- SV Gate: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16 mm
- Angle Correct: +/- 90°, 1° step
- Spectral Color: 6 types
- PW Sweep Speed: 8 steps
- Invert: On/Off
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TL only
- Duplex: On/Off(PW only)
- PW Acoustic Output: 0 – 100 %, 10 % step
- Spectral Averaging: 4 steps
- Time Resolution: 4 steps
- PW/CF Ratio: 1, 2, 4
- Rejection: 15 steps
- Gain: 0 – 32 dB, 1 dB step
- Wall Filter: 5 – 1500 Hz, 22 steps, depend on probe/application
- PW Angle Steer: 0, +/- 5, 10, 15, 20°
- PRF: 640 – 29800 Hz with PW, 50000 Hz with CW
- Sample Volume Depth: 29 steps default pre-settable
- CW-Mode (option) is Available on the Following Probes
  - 3S
  - 5S
  - 7S
  - 3Sp
  - 5Sp
  - P2D
  - P6D

Coded Harmonic Imaging

- Available on the Following Probes
  - 3.5C
  - 3.5CS
  - 3CRF
  - 4C
  - 5CS
  - E8C
  - E8CS
  - 8C
  - ERB

- BE9CS
- 3S
- 5S
- 7S
- 3Sp
- 5Sp
- 8L
- 9L
- 11L
- i12L
- i739
- T739
- 4D3C-L
- 4DE7C
- 4D8C

• Softener: 4 steps
• Line Density: 4 steps
• Line Density Zoom: 4 steps
• Suppression: 6 steps
• Edge Enhance: 6 steps
• Gray Scale Map: 23 types
• Clear Map: 23 types
• Tint Map: 10 types
• Gain: 0 – 98 dB, 2 dB step
• Dynamic Range: 30 – 120 dB, 3 dB step
• Rejection: 6 steps
• Auto Line Density: On/Off pre-settable
• Frequency: Up to 5 steps, depend on probe

Coded Excitation

• Available on the following probes the Following Probes
- 11L
- 12L
- 8C
- E8C
- E8CS
- BE9CS
- ERB

Virtual Convex

• Provides a Convex Field of View for Convex, Linear and Sector probes
• Available on the Following Probes
- 8L
- 9L
- 10L
- 11L
- 12L
- i12L
- T739
- I739
- 3S
- 5S
- 7S
- 3Sp
- 5Sp
- ERB - Linear
- 4C
- 5CS
- 4D3C-L
- 3CRF

Automatic Optimization

• Optimize B-Mode, B-Flow image to improve contrast resolution.
• Selectable amount of contrast resolution improvement (low, medium, high)
• Auto-TGC in B-Mode and Color – adjusts overall and axial gain
• Optimize Spectral Waveform – adjusts baseline, invert, PRF (on live image), and angle correction
• Algorithm works on focal zone/ number and depth changes
• Available on stored or live image
• Available in B-Mode, B-Flow, PW Doppler, Color

B-Flow (option)

• Available on 8L, 9L, 10L, 11L, i739 and T739 Probes
• Background: On/Off
• Sensitivity/PRI: 14 steps
• Line Density: 4 steps
• Edge Enhance: 6 steps
• Frame Average: 8 steps
• Gray Scale Map: 23 types
• Clear Map: 23 types
• Tint Map: 10 types
• Dynamic Range: 30 – 120 dB, 3 dB step
• Rejection: 6 steps
• Gain: 0 – 98 dB, 2 dB step
• Auto Line Density: On/Off pre-settable
• Accumulation: 8 steps

Coded Contrast Imaging (option)

• Coded Harmonic Angio: Available on 3.5C, 3.5CS, 4C and 5CSprobes
- Tissue Background Selection: 4 steps
• TruAgent Detection: Available on 3.5C, 3.5CS, 4C and 5CS probes
- 2 frequencies on 3.5C and 3.5CS, 1 on 4C and 5CS probes
• Coded Phase Inversion:
2 types, Available on 3.5C and 3.5CS probes
3 type, Available on 4C, 5CS probes
- Tissue Background Selection: 4 steps
• Time Trigger Scan: 0.3, & 0.5 – 10 sec, 0.5 sec step
• Time Intensity Curve Analysis
• Accumulation: 8 steps
• SRI-HD

The LOGIQ P5 is designed for compatibility with commercially available ultrasound contrast agents. Because the availability of these agents is subject to government regulation and approval, product features intended for use with these agents may not be commercially marketed nor made available before the contrast agent is cleared for use. Contrast related product features are enabled only on systems for delivery to an authorized country or region of use. GE Medical Systems makes no claims concerning the safety or effectiveness of contrast agents.

LOGIQView (option)

• Available on all probes
• Extended Field of View Imaging
• For use in B-Mode
• LOGIQView Status
• Auto detection of scan direction
• Pre or post-process zoom up to 10X
• Rotation
• Auto best fit on monitor
• Measurements in B-Mode
• Up to 60 cm scan length

Easy 3D (option)

Colorize
Threshold (Opacification)
Render
Texture
Gray Surface
Scalpel
Auto Movie
Undo
Reset

Advanced 3D (option)

• Acquisition of Color data
• Automatic rendering
• 3D Landscape technology
• 3D Movie
• Main Mode

CrossBeam (option)

• Provides Spatial Compounding
• Available on the linear and convex probes
- 3CRF
- 4C
- 5CS
- 8C
- E8C
- E8CS
- 8L

- 9L
- 11L
- I12L
- I739
- T739
- BE9CS
- 4D3C-L
- 4DE7C
- 4D8C
- ERB

- Provides 3, 5 or 7 angles for Compounding on Linear probes, 3 or 5 angles on Convex probes
- Compatible with Side by Side Display
- Compatible with: Color mode, Timeline mode, SRI-HD, Coded Harmonic Imaging, Virtual Convex
-

SRI-HD (option)

- High Definition Speckle Reduction Imaging
- Provides 6 levels of speckle reduction
- Side by Side Display
- Compatible with ALL linear, convex and sector transducers
- Compatible with ALL scanning mode
- Compatible with Side by Side Display

Real Time 4D (option)

- Acquisition Modes:
  - Realtime 4D Bmode
  - Static 3D Bmode
- Visualization Modes:
  - 3D Rendering (diverse surface and intensity projection modes)
  - Sectional Planes (3 Section planes perpendicular to each other)
- Render Mode:
  - Surface texture, Surface Smooth, max-, min- and X-ray (average intensity projection), Gradient, Inversion, Glass Body, Mix Mode of two render Modes
- Curved 3point Render start
- 3D Movie
- Scalpel: 3D Cut tool
- Display Format:
  - Quad: A-/B-/C-Plane/3D
  - Dual: A-Plane/3D
  - Single: 3D or A- or B- or C-Plane

Pre-Processing

- Write Zoom up to 8x
- B/M-Mode
  - Gain
  - TGC
  - Acoustic Output
  - Transmission Focus Position
  - Transmission Focus Number
  - Transmission Focus Width
  - Imaging Frequency
  - Edge Enhancement
  - Line Density Control
  - Live Anatomical M-mode
- PW/CW-Mode
  - Gain
  - Dynamic Range
  - Acoustic Output
  - Doppler Frequency
  - Velocity Scale (PRF)
  - PW/CF Ratio
  - Wall Filter
  - Time Resolution
  - Sample Volume Gate for PW-Mode
    Length
    Depth
- Color Flow Mode
  - CFM Gain
  - CFM Velocity Scale (PRF)
  - Acoustic Output
  - CFM Frequency
  - Wall Filter
  - Packet Size
  - CFM Spatial Filter
  - CFM Line Density
  - CFM Regression Filter
  - Accumulation

Post-Processing w/ TruAccess (Raw Data)

- SRI-HD – Selectable level of Speckle Reduction Imaging
- Max Read Zoom to 16x
- B/M-Mode
  - ATO (Auto Tissue Optimization)
  - Image Reverse
  - Image Rotation
  - Gray Map
  - Colorized B and M
  - Gain
  - Dynamic Range
  - TGC
  - Compression
  - Rejection
  - Frame Averaging
  - B Softener
  - Suppression
  - Sweep Speed for M-Mode
  - Anatomical M Mode
- PW/CW-Mode
  - ASO (Auto Spectral Optimization)
  - Base Line Shift
  - Gray Map
  - Post Gain
  - Compression
  - Rejection
  - Spectral Averaging
  - Colorized D
  - Display Format
  - Sweep Speed
- Color Flow Mode
  - ACO (Auto Color Optimization)
  - Base Line Shift
  - Color Map
  - Post Gain
  - Frame Averaging
  - CFM Display Threshold
  - Angle Correct (PW mode)
  - Quick Angle Correct (PW mode)
  - Auto Angle Correct (PW mode)
  - Spectral Invert for Color and Doppler
- 3D reconstruction from a stored CINE loop
- Anatomical M-Mode
- Accumulation
- Cine Capture

Physiological Input Panel (Option)

- Physiological Input
  - ECG, 1 channel
- Dual R-Trigger
- Pre-settable ECG R Delay Time
- Pre-settable ECG Position
- Adjustable ECG Gain Control
- Automatic Heart Rate Display

Measurements / Calculations

General B-Mode

- Depth & Distance
- Circumference (Ellipse / Trace)
- Area (Ellipse / Trace)
- Volume (Ellipsoid)
- % Stenosis (Area or Diameter)
- Angle between two lines

General M-Mode

- M-Depth
- Distance
- Time
- Slope
- Heart Rate

General Doppler Measurements/Calculations

- Velocity
- Time
- A/B Ratio (Velocities / Frequency Ratio
- PS (Peak Systole)
- ED (End Diastole)
- PS/ED (PS/ED Ratio)

- ED/PS (ED/PS Ratio)
- AT (Acceleration Time)
- ACCEL (Acceleration)
- TAMAX (Time Averaged Maximum Velocity
- Volume Flow (TAMEAN and Vessel Area)
- Heart Rate
- PI (Pulsatility Index)
- RI (Resistivity Index)

Real-time Doppler Auto Measurements / Calculations

- PS (Peak Systole)
- ED (End Diastole)
- MD (Minimum Diastole)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- AT (Acceleration Time)
- ACC (Acceleration)
- PS/ED (PS/ED Ratio)
- ED/PS (ED/PS Ratio)
- HR (Heart Rate)
- TAMAX (Time Averaged Maximum Velocity)
- PVAL (Peak Velocity Value)
- Volume Flow (TAMEAN and Vessel Area)

OB Measurements/Calculations

- Gestational Age by:
  - GS (Gestational Sac)
  - CRL (Crown Rump Length)
  - FL (Femur Length)
  - BPD (Biparietal Diameter)
  - AC (Abdominal Circumference)
  - HC (Head Circumference)
  - APTD x TTD (Anterior/Posterior Trunk Diameter by Transverse Trunk Diameter)
  - LV (Length of Vertebra)
  - FTA (Fetal Trunk Cross-sectional Area)
  - HL (Humerus Length)
  - BD (Binocular Distance)
  - FT (Foot Length)
  - OFD (Occipital Frontal Diameter)
  - TAD (Transverse Abdominal Diameter)
  - TCD (Transverse Cerebellum Diameter)
  - THD (Thorax Transverse Diameter)
  - TIB (Tibia Length)
  - ULNA (Ulna Length)
- Estimated Fetal Weight (EFW) by:
  - AC, BPD
  - AC, BPD, FL
  - AC, BPD, FL, HC
  - AC, FL
  - AC, FL, HC
  - AC, HC
- Calculations and Ratios
  - FL/BPD
  - FL/AC
  - FL/HC
  - HC/AC
  - CI (Cephalic Index)
  - AFI (Amniotic Fluid Index)
- Measurements / Calculations by: Jeanty, Merz, Tokyo University, Mercer, Hansmann, Erickson, Hill, Shephard, Hadlock, Hohler, Campbell
- Fetal Graphical Trending
- Growth Percentiles
- Multi-Gestational Calculations (4)
- Fetal Qualitative Description (Anatomical survey)
- Fetal Environmental Description (Biophysical profile)
- Programmable OB Tables
- Over 20 selectable OB Calcs
- Expanded Worksheets

GYN Measurements/Calculations

- Right Ovary Length, Width, Height
- Left Ovary Length, Width, Height
- Uterus Length, Width, Height
- Ovarian Volume
- ENDO (Endometrial thickness)
- Ovarian RI
- Uterine RI
- Follicular measurements
- Summary Reports

Vascular Measurements/Calculations

- SYS DCCA (Systolic Distal Common Carotid Artery)
- DIAS DCCA (Diastolic Distal Common Carotid Artery)
- SYS MCCA (Systolic Mid Common Carotid Artery)
- DIAS MCCA (Diastolic Mid Common Carotid Artery)
- SYS PCCA (Systolic Proximal Common Carotid Artery)
- DIAS PCCA (Diastolic Proximal Common Carotid Artery)
- SYS DICA (Systolic Distal Internal Carotid Artery)
- DIAS DICA (Systolic Distal Internal Carotid Artery)
- SYS MICA (Systolic Mid Internal Carotid Artery)
- DIAS MICA (Diastolic Mid Internal Carotid Artery)
- SYS PICA (Systolic Proximal Internal Carotid Artery)
- DIAS PICA (Diastolic Proximal Internal Carotid Artery)
- SYS DECA (Systolic Distal External Carotid Artery)
- DIAS DECA (Diastolic Distal External Carotid Artery)
- SYS PECA (Systolic Proximal External Carotid Artery)
- DIAS PECA (Diastolic Proximal External Carotid Artery)
- VERT (Systolic Vertebral Velocity)
- SUBCLAV (Systolic Subclavian Velocity)
- Summary Reports
- Mean IMT Measurement Tools

Cardiac

Measurements/Calculations

B-Mode Measurements

- Aorta
  Aortic Root Diameter (Ao Root Diam)
  Aortic Arch Diameter (Ao Arch Diam)
  Ascending Aortic Diameter (Ao Asc)
  Descending Aortic Diameter (Ao Desc Diam)
  Aorta Annulus Diameter (Ao Annulus Diam)
  Aorta Isthmus (Ao Isthmus)
  Aorta *** (Ao st junct)
- Aortic Valve
  Aortic Valve Cusp Separation (AV Cusp)
  Aortic Valve Area Planimetry (AVA Pl ani met ry)
  *** (Trans AVA)
- Left Atrium
  Left Atrium Diameter (LA Diam)
  LA Length (LA Major)
  LA W idth (LA Minor)
  Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao Ratio)
  Left Atrium Area (LAA(d), LAA(s))
  Left Atrium Volume, Single Plane, Method of Disk (LAEDV A2C, LAESV A2C) (LAEDV A4C, LAESV A4C)
- Left Ventricle
  Left Ventricle Mass (LVPWd, LVPWs)
  Left Ventricle Volume, Teichholz/Cubic (LVIDd, LVI Ds)
  Left Ventricle Internal Diameter (LVIDd, LVI Ds)
  Left Ventricle Length (LVLd, LVLs)
  Left Ventricle Outflow Tract Diameter (LVOT Diam)
  Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs)
  Left Ventricle Length (LV Major)

Left Ventricle Width (LV Minor)
Left Ventricle Outflow Tract Area (LVOT)
Left Ventricle Area, Two Chamber/Four Chamber/Short Axis (LVA (d), LVA (s))
Left Ventricle Endocardial Area, Width (LVA (d), LVA(s))
Left Ventricle Epicardial Area, Length (LVAepi (d), LVAepi (s))
Left Ventricle Mass Index (LVPWd, LVPWs)
Ejection Fraction, Teichholz/Cube (LVIDd, LVIDs)
Left Ventricle Posterior Wall Fractional Shortening (LVPWd, LVPWs)
Left Ventricle Stroke Index, Teichholz/Cube (LVIDd, LVIDs, and Body Surface Area)
Left Ventricle Fractional Shortening (LVIDd, LVIDs)
Left Ventricle Stroke Volume, Teichholz/Cubic (LVIDd, LVIDs)
Left Ventricle Stroke Index, Single Plane, Two Chamber, Method of Disk (LVI Dd, LVIDs, LVSd, LVSs)
Left Ventricle Stroke Index, Single Plane, Four Chamber, Method of Disk (LVI Dd, LVIDs, LVSd, LVSs)
Left Ventricle Stroke Index, Bi-Plane, Bullet, Method of Disk (LVAd, LVAs)
Interventricular Septum (IVS)
Left Ventricle Internal Diameter (LVI D)
Left Ventricle Posterior Wall Thickness (LVPW)

- Mitral Valve
  Mitral Valve Annulus Diameter (MV Ann Diam)
  E-Point-to-Septum Separation (EPSS)
  Mitral Valve Area by Pressure Half Time (MVA By PHT)
  Mitral Valve Area Planimetry (MVA Planimetry)
- Pulmonic Valve
  Pulmonic Valve Area (PV Planimetry)
  Pulmonic Valve Annulus Diameter (PV Annulus Diam)
  Pulmonic Diameter (Pulmonic Diam)
- Right Atrium
  Right Atrium Diameter, Length (RAD Ma)
  Right Atrium Diameter, Width (RAD Mi)
  Right Atrium Area (RAA)
  Right Atrium Volume, Single Plane, Method of Disk (RAAd)
  Right Atrium Volume, Systolic, Single Plane, Method of Disk (RAAs)
- Right Ventricle
  Right Ventricle Outflow Tract Area (RVOT Planimetry)
  Left Pulmonary Artery Area (LPA Area)
  Right Pulmonary Artery Area (RPA Area)
  Right Ventricle Internal Diameter (RVIDd, RVIDs)
  Right Ventricle Diameter, Length (RVD Ma)
  Right Ventricle Diameter, Width (RVD Mi)
  Right Ventricle Wall Thickness (RVAWd, RVAWs)
  Right Ventricle Outflow Tract Diameter (RVOT Diam)
  Left Pulmonary Artery (LPA)
  Main Pulmonary Artery (MPA)
  Right Pulmonary Artery (RPA)
- System
  Interventricular Septum Thickness (IVSd, IVSs)
  Inferior Vena Cava
  Pulmonary Artery Diameter (MPA)
  Systemic Vein Diameter (Systemic Diam)
  Patent Ductus Arterosis Diameter (PDA Diam)
  Pericard Effusion (PEs)
  Patent Foramen Ovale Diameter (PFO Diam)
  Ventricular Septal Defect Diameter (VSD Diam)
  Interventricular Septum (IVS) Fractional Shortening (IVSd, IVSs)
- Tricuspid Valve
  Tricuspid Valve Area (TV Panimetry)
  Tricuspid Valve Annulus Diameter (TV Annulus Diam)

M-Mode Measurements

- Aorta
  Aortic Root Diameter (Ao Root Diam)
- Aortic Valve
  Aortic Valve Diameter (AV Diam)
  Aortic Valve Cusp Separation (AV Cusp)
  Aortic Valve Ejection Time (LVET)
- Left Atrium
  Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao Ratio)
  Left Atrium Diameter (LA Diam)
- Left Ventricle
  Left Ventricle Volume, Teichholz/Cubic (LVIDd, LVI Ds)
  Left Ventricle Internal Diameter (LVIDd, LVI Ds)
  Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs)
  Left Ventricle Ejection Time (LVET)
  Left Ventricle Pre-Ejection Period (LVPEP)
  Interventricular Septum (IVS)
  Left Ventricle Internal Diameter (LVI D)
  Left Ventricle Posterior Wall Thickness (LVPW)
- Mitral Valve
  E-Point-to-Septum Separation (EPSS)
  Mitral Valve Leaflet Separation (D-E Excursion)
  Mitral Valve Anterior Leaflet Excursion (D-E Excursion)
  Mitral Valve D-E Slope (D-E Slope)
  Mitral Valve E-F Slope (E-F Slope)
- Pulmonic Valve
  QRS complex to end of envelope (Q-to-PV close)
- Right Ventricle
  Right Ventricle Internal Diameter (RVIDd, RVIDs)
  Right Ventricle Wall Thickness (RVAWd, RVAWs)
  Right Ventricle Outflow Tract Diameter (RVOT Diam)
  Right Ventricle Ejection Time (RVET)
  Right Ventricle Pre-Ejection Period (RVPEP)
  Velocity Circumferential Fiber Shortening (Vcf)
- System
  Interventricular Septum Thickness (IVSd, IVSs)
  Pericard Effusion (PE(d))
  Interventricular Septum (IVS) Fractional Shortening (IVSd, IVSs)
- Tricuspid Valve
  QRS complex to end of envelope (Q-to-TV close)

Doppler Mode Measurements

- Aortic Valve
  Aortic Insufficiency Mean Pressure Gradient (AR Trace)
  Aortic Insufficiency Peak Pressure Gradient (AR Vmax)
  Aortic Insufficiency End Diastole

Pressure Gradient (AR Trace)
Aortic Insufficiency Mean Velocity (AR Trace)
Aortic Insufficiency Mean Square Root Velocity (AR Trace)
Aortic Insufficiency Velocity Time Integral (AR Trace)
Aortic Valve Mean Velocity (AV Trace)
Aortic Valve Mean Square Root Velocity (AV Trace)
Aortic Valve Velocity Time Integral (AV Trace)
Aortic Valve Mean Pressure Gradient (AV Trace)
Aortic Valve Peak Pressure Gradient (AR Vmax)
Aortic Insufficiency Peak Velocity (AR Vmax)
Aortic Insufficiency End-Diastolic Velocity (AR Trace)
Aortic Valve Peak Velocity (AV Vmax)
Aortic Valve Peak Velocity at Point E (AV Vmax)
Aorta Proximal Coarctation (Coarc Pre-Duct)
Aorta Distal Coarctation (Coarc Post-Duct)
Aortic Valve Insufficiency Pressure Half Time (AR PHT)
Aortic Valve Flow Acceleration (AV Trace)
Aortic Valve Pressure Half Time (AV Trace)
Aortic Valve Acceleration Time (AV Acc Ti me)
Aortic Valve Deceleration TIme (AV Trace)
Aortic Valve Ejection Time (AVET)
Aortic Valve Acceleration to Ejection Time Ratio (AV Acc Time, AVET)
Aortic Valve Area according to PHT

- Left Ventricle

Left Ventricle Outflow Tract Peak Pressure Gradient (VLOT Vmax)
Left Ventricle Outflow Tract Peak Velocity (LVOT Vmax)
Left Ventricle Outflow Tract Mean Pressure Gradient (LVOT Trace)
Left Ventricle Outflow Tract Mean Velocity (LVOT Trace)
Left Ventricle Outflow Tract Mean Square Root Velocity (LVOT Trace)
Left Ventricle Outflow Tract Velocity Time Integral (LVOT Trace)
Left Ventricle Ejection Time (LVET)
Cardiac Output by Aortic Flow (AVA Pl ani met ry, AV Trace)
Stroke Volume Index by Aortic Flow (AVA Planimetry, AV Trace)

- Mitral Valve

Mitral Valve Regurgitant Flow Acceleration (MR Trace)
Mitral Valve Regurgitant Mean Velocity (MR Trace)
Mitral Regurgitant Mean Square Root Velocity (MR Trace)
Mitral Regurgitant Mean Pressure Gradient (MR Trace)
Mitral Regurgitant Velocity Time Integral (MR Trace)
Mitral Valve Mean Velocity (MR Trace)
Mitral Valve Mean Square Root Velocity (MR Trace)
Mitral Valve Velocity Time Integral (MR Trace)
Mitral Valve Mean Pressure Gradient (MR Trace)
Mitral Regurgitant Peak Pressure Gradient (MR Vmax)
Mitral Valve Peak Pressure Gradient (MR Vmax)
Mitral Regurgitant Peak Velocity (MR Vmax)
Mitral Valve Peak Velocity (MR Vmax)
Mitral Valve Velocity Peak A (MV A Velocity)
Mitral Valve Velocity Peak E (MV E Velocity)
Mitral Valve Area according to PHT (MV PHT)
Mitral Valve Flow Deceleration (MV Trace)
Mitral Valve Pressure Half Time (PV PHT)
Mitral Valve Flow Acceleration (MV Trace)
Mitral Valve E-Peak to A-Peak Ratio (A-C and D-E) (MV E/ARatio)
Mitral Valve Acceleration Time (MV Acc Time)
Mitral Valve Deceleration Time (MV Dec Time)
Mitral Valve Ejection Time ((MV Trace)
Mitral Valve A-Wave Duration (MV A Dur)
Mitral Valve Time to Peak (MV Trace)
Mitral Valve Acceleration Time/Deceleration Time Ratio (MVAcc/Dec Time)
Stroke Volume Index by Mitral Flow (MVA Planimetry, MVTrace)
Mitral Valve Area from Continuity Equation (MVAPlanimetry, LVOT Vmax, MV Vmax)

- Pulmonic Valve

Pulmonic Insufficiency Peak Pressure Gradient (PR Vmax)
Pulmonic Insufficiency End-Diastolic Pressure Gradient (PRTrace)
Pulmonic Valve Peak Pressure Gradient (PV Vmax)
Pulmonic End-Diastolic Pressure Gradient (PR Trace)
Pulmonic Insufficiency Peak Velocity (PR Vmax)
Pulmonic Insufficiency End-Diastolic Velocity (Prend Vmax)
Pulmonic Valve Peak Velocity (PV Vmax)
Pulmonic End-Diastolic Velocity (PV Trace)
Pulmonary Artery Diastolic Pressure (PV Trace)
Pulmonic Insufficiency Mean Pressure Gradient (PR Trace)
Pulmonic Valve Mean Pressure Gradient (PV Trace)
Pulmonic Insufficiency Mean Velocity (PR Trace)
Pulmonic Insufficiency Mean Square Root Velocity(PR Trace)
Pulmonic Insufficiency Velocity Time Integral (PR Trace)
Pulmonic Valve Mean Velocity (PV Trace)
Pulmonic Valve Mean Square Root Velocity (PV Trace)
Pulmonic Valve Velocity Time Integral (PV Trace)
Pulmonic Insufficiency Pressure Half Time (PR PHT)
Pulmonic Valve Flow Acceleration (PV Acc Time)
Pulmonic Valve Acceleration Time (PV Acc Time)
Pulmonic Valve Ejection Time (PVET)
Pulmonic Valve Pre-Ejection Period (PVPEP)
QRS complex to end of envelope (Q-to-

PV close)
Pulmonic Valve Acceleration to Ejection TIme Ratio (PV Acc Time, PVET)
Pulmonic Valve Pre-Ejection to Ejection Time Ratio (PVPEP, PVET)

- Right Ventricle
  Right Ventricle Outflow Tract Peak Pressure Gradient (RVOT Vmax)
  Right Ventricle Systolic Pressure (RVOT Vmax)
  Right Ventricle Outflow Tract Peak Velocity (RVOT Vmax)
  Right Ventricle Diastolic Pressure (RVOT Trace)
  Right Ventricle Outflow Tract Velocity Time Integral (RVOTTrace)
  Right Ventricle Ejection Time (RV Trace)
  Stroke Volume by Pulmonic Flow (RVOTPlanimetry, RVOTTrace)
  Right Ventricle Stroke Volume Index by Pulmonic Flow (RVOT Planimetry, RVOT Trace)
- System
  Pulmonary Artery Peak Velocity (PV Vmax)
  Pulmonary Vein Velocity Peak A (reverse) (P Vein A)
  Pulmonary Vein Peak Velocity (P Vein D, P Vein S)
  Systemic Vein Peak Velocity (PDA Diastolic, PDA Systolic)
  Ventricular Septal Defect Peak Velocity (VSD Vmax)
  Atrial Septal Defect (ASD Diastolic, ASD Systolic)
  Pulmonary Artery Velocity Time Integral (PV Trace)
  Systemic Vein Velocity Time Integral (PDA Trace)
  Pulmonary Vein A-Wave Duration (P Vein A Dur)
  IsoVolumetric Relaxation Time (IVRT)
  IsoVolumetric Contraction Time (IVCT)
  Pulmonary Vein S/D Ratio (P Vein D, P Vein S)
  Ventricular Septal Defect Peak Pressure Gradient (VSD Vmax)
  Pulmonic-to-Systemic Flow Ratio (Qp/Qs)
- Tricuspid Valve
  Tricuspid Regurgitant Peak Pressure Gradient (TR Vmax)
  Tricuspid Valve Peak Pressure Gradient (TV Vmax)
  Tricuspid Regurgitant Peak Velocity (TR Vmax)
  Tricuspid Valve Peak Velocity (TV Vmax)
  Tricuspid Valve Velocity Peak A (TV A Velocity)
  Tricuspid Valve Velocity Peak E (TV E Velocity)
  Tricuspid Regurgitant Mean Pressure Gradient (TR Trace)
  Tricuspid Valve Mean Pressure Gradient (TV Trace)
  Tricuspid Regurgitant Mean Velocity (TR Trace)
  Tricuspid Regurgitant Mean Square Root Velocity (TR Trace)
  Tricuspid Regurgitant Velocity Time Integral (TR Trace)
  Tricuspid Valve Mean Velocity (TV Trace)
  Tricuspid Valve Mean Square Root Velocity (TV Trace)
  Tricuspid Valve Velocity Time Integral (TV Trace)
  Tricuspid Valve Time to Peak (TV Acc/Dec Time)
  Tricuspid Valve Ejection Time (TV Acc/Dec Time)
  Tricuspid Valve A-Wave Duration (TV A Dur)
  QRS complex to end of envelope (Q-to-TV close)
  Tricuspid Valve Pressure Half Time (TV PHT)
  Stroke Volume by Tricuspid Flow (TV Planimetry, TV Trace)
  Tricuspid Valve E-Peak to A-Peak Ratio (TV E/A Velocity)

Color Flow Mode Measurements

- Aortic Valve
  - Proximal Isovelocity Surface Area: Regurgitant Orifice Area (AR Radius)
  - Proximal Isovelocity Surface Area: Radius of Aliased Point (AR Radius)
  - Proximal Isovelocity Surface Area: Regurgitant Flow (AR Trace)
  - Proximal Isovelocity Surface Area: Regurgitant Volume Flow (AR Trace)

  Proximal Isovelocity Surface Area: Aliased Velocity (AR Vmax)
- Mitral Valve
  Proximal Isovelocity Surface Area: Regurgitant Orifice Area (MR Radius)
  Proximal Isovelocity Surface Area: Radius of Aliased Point (MR Radius)
  Proximal Isovelocity Surface Area: Regurgitant Flow (MR Trace)
  Proximal Isovelocity Surface Area: Regurgitant Volume Flow (MR Trace)
  Proximal Isovelocity Surface Area: Aliased Velocity (MR Vmax)

Combination Mode Measurements

- Aortic Valve
  - Aortic Valve Area (Ao Root Diam, LVOT Vmax, AV Vmax)
  - Aortic Valve Area by Continuity Equation by Peak Velocity (Ao Root Diam, LVOT Vmax, AV Vmax)

  Stroke Volume by Aortic Flow (AVA Pl ani met ry, AV Trace)
  Cardiac Output by Aortic Flow (AVA Planimetry, AV Trace, HR)
  Aortic Valve Area by Continuity Equation VTI (Ao Root Diam, LVOT Vmax, AV Trace)
- Left Ventricle
  Cardiac Output, Teichholz/Cubic (LVIDd, LVI Ds, HR)
  Cardiac Output Two Chamber, Single Plane, Area-Length/ Method of Disk(Simpson) (LVAd, LVAs, HR)
  Cardiac Output Four Chamber, Single Plane, Area-Length/ Method of Disk(Simpson) (LVAd, LVAs, HR)
  Ejection Fraction Two Chamber, Single Plane, Area-Length/ Method of Disk(Simpson) (LVAd, LVAs)
  Ejection Fraction Four Chamber, Single Plane, Area-Length/ Method of Disk(Simpson) (LVAd, LVAs)
  Left Ventricle Stroke Volume, Single Plane, Two Chamber/Four Chamber, Area-Length (LVAd, LVAs)
  Left Ventricle Stroke Volume, Single Plane, Two Chamber/Four Chamber, Method of Disk(Simpson) (LVIDd, LVIDs, LVAd, LVAs)
  Left Ventricle Volume, Two Chamber/Four Chamber, Area-Length (LVAd, LVAs)
  Ejection Fraction, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)
  Left Ventricle Stroke Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)

Left Ventricle Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)
Left Ventricle Stroke Index, Single Plane, Two Chamber/Four Chamber, Area-Length (LVSd, LVSs, and BSA)
Left Ventricle Volume, Single Plane, Two Chamber/Four Chamber, Method of Disk (LVAd, LVAs)
Left Ventricle Volume, Apical View, Long Axis, Method of Disk (LVAd, LVAs)
Stroke Volume by Aortic Flow (AVA Planimetry, AV Trace)

- Mitral Valve
  Stroke Volume by Mitral Flow (MVA Planimetry, MV Trace)
  Cardiac Output by Mitral Flow (MVA Planimetry, MV Trace, HR)
- Pulmonic Valve
  Stroke Volume by Pulmonic Flow (PV Planimetry, PV Trace)
  Cardiac Output by Pulmonic Flow (PV Planimetry, PV Trace, HR)
- Tricuspid Valve
  Cardiac Output by Tricuspid Flow (TV Planimetry, TV Trace, HR)

Report Designer

- On-board reporting package automates report writing
- Formats various exam results into a report suitable for printing to a windows printer or reviewing on a standard PC
- Exam results include patient info, exam info, measurements, calculations, images, comments and diagnosis
- Standard templates provided

Customizable templates

Probes

- 3.5CS Thin Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width: 2.0 – 5.0 MHz
  - Number of Element: 128
  - Convex Radius: 38 mmR
  - FOV (Max): 68°
  - Physical Foot Print: 48 x 11 mm
  - B-mode Imaging Frequency: 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency: 4, 5, 5.2, 5.5 MHz
  - Doppler Frequency: 2.5, 3.3 MHz
  - Biopsy Guide Available: Single Angle, Reusable

- 3.5C Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width: 2.0 – 5.0 MHz
  - Number of Element: 128
  - Convex Radius: 38 mmR
  - FOV (Max): 68°
  - Physical Foot Print: 48 x 11 mm
  - B-mode Imaging Frequency: 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency: 4, 5, 5.2, 5.5 MHz
  - Doppler Frequency: 2.5, 3.3 MHz
  - Biopsy Guide Available: Single Angle, Reusable

- 4C Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Vascular
  - Probe Band Width : 2 – 5 MHz
  - Number of Element: 128
  - Convex Radius : 60 mmR
  - FOV (Max) : 58°
  - Physical Foot Print : 60 x 18 mm
  - B-mode Imaging Frequency : 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0, 5.2, 5.5 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Multi Angle, Reusable

- 5CS Convex Probe
  - Applications: Abdomen, OB Gyn, Urology
  - Probe Band Width : 2 – 6 MHz
  - Number of Element : 128
  - Convex Radius : 60 mmR
  - FOV (Max) : 58°
  - Physical Foot Print : 60 x 18 mm
  - B-mode Imaging Frequency : 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0, 5.5, 6.0 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Multi Angle, Reusable

- 8L Wide Band Linear Probe
  - Applications : Vascular, Small Parts
  - Probe Band Width : 4 – 11MHz
  - Number of Element : 128
  - FOV (Max) : 38 mm
  - Physical Foot Print : 38 x 10 mm
  - B-mode Imaging Frequency : 6.0, 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0, 12.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 9L Wide Band Linear Probe
  - Applications: Vascular, Small Parts
  - Probe Band Width : 3 – 10 MHz
  - Number of Element : 192
  - FOV (Max) : 44 mm
  - Physical Foot Print : 44 x 6 mm
  - B-mode Imaging Frequency : 5.0, 7.0, 9.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 10L Wide Band Linear Probe
  - Applications: Vascular, Small Parts, Neonatal, Pediatrics
  - Probe Band Width: 4 – 11 MHz
  - Number of Element: 192
  - FOV (Max): 39 mm
  - Physical Foot Print: 39 x 10 mm
  - B-mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
  - Doppler Frequency: 5.0, 6.7 MHz
  - Steered Angle: +/- 10°, 20°
  - Biopsy Guide Available: Multi Angle, Reusable

- 11L Wide Band Linear Probe
  - Applications : Small Parts, Vascular, Neonatal, Pediatrics
  - Probe Band Width : 5 – 13 MHz
  - Number of Element : 192
  - FOV (Max) : 38.4 mm
  - Physical Foot Print : 38 x 10mm
  - B-mode Imaging Frequency : 7.0, 10.0, 12.0 MHz
  - Harmonic Frequency : 10.0, 12.0, 13.0 MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : 0, +/- 5, 10, 15, 20°
  - Biopsy Guide Available : Multi Angle, Reusable

- 12L Wide Band Linear Probe
  - Applications: Small Parts, Vascular, Neonatal, Pediatrics
  - Probe Band Width: 5 – 13.0 MHz

- Number of Element: 192
- FOV (Max): 39 mm
- Physical Foot Print: 45 x 10 mm
- B-mode Imaging Frequency: 7.0, 10.0, 12.0 MHz
- Harmonic Frequency: 10.0, 12.0 MHz
- Doppler Frequency: 5.0, 6.7 MHz
- Steered Angle: +/- 10°, 20°

Biopsy Guide Available: Single Angle, Reusable

- 3CRF Wide Band Microconvex Probe
  - Applications: Abdomen, Urology, Vascular
  - Probe Band Width : 2.0 – 4 MHz
  - Number of Element: 128
  - Convex Radius : 20 mmR
  - FOV (Max) : 80°
  - Physical Foot Print : 28 x 16 mm
  - B-mode Imaging Frequency : 2.0,
  - 3.0, 3.5, 4.0 MHz
  - Harmonic Frequency : 3.6, 3.8, 4.0,
  - 4.2MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - Biopsy Guide Available : Single Angle, Reusable

- E8C Wide Band Microconvex Probe
  - Applications : OB Gyn, Urology, Endocavity
  - Probe Band Width : 4 – 11 MHz
  - Number of Element : 128
  - Convex Radius : 11 mmR
  - FOV (Max) : 133°
  - Physical Foot Print : 26 x 10 mm
  - B-mode Imaging Frequency : 6.0,
  - 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0
  - MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single Angle, Disposable and Reusable

- E8CS Wide Band Microconvex Probe
  - Applications : OB Gyn, Urology, Endocavity
  - Probe Band Width : 4 – 11 MHz
  - Number of Element : 128
  - Convex Radius : 9 mmR
  - FOV (Max) : 168°
  - Physical Foot Print : 15 x 10 mm
  - B-mode Imaging Frequency : 6.0,
  - 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : Single
  - Angle, Disposable and Reusable

- 8C Wide Band Microconvex Probe
  - Applications : Neonatal, Pediatrics
  - Probe Band Width : 4 11 MHz
  - Number of Element : 128
  - Convex Radius : 11 mmR
  - FOV (Max) : 133°
  - Physical Foot Print : 26 x 10 mm
  - B-mode Imaging Frequency : 6.0,
  - 8.0, 10.0 MHz
  - Harmonic Frequency : 8.0, 10.0 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - Biopsy Guide Available : None

- 3S Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Trancranial, Abdomen
  - Probe Band Width : 1.5 – 3.5 MHz
  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 19 x 16 mm
  - B-mode Imaging Frequency : 2.0,
  - 2.5, 3.0 MHz
  - Harmonic Frequency : 2.8, 3.0, 3.2,
  - 3.6 MHz
  - Doppler Frequency : 1.7, 2.0, 2.2
  - MHz
  - CW Doppler Frequency : 2.0 MHz
  - Biopsy Guide Available : Multi
  - Angle, Reusable

- 5S Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Trancranial, Abdomen
  - Probe Band Width : 2 – 5 MHz
  - Number of Element : 96
  - FOV (Max) : 90°
  - Physical Foot Print : 19 x 11 mm
  - B-mode Imaging Frequency : 3.0 ,
  - 4.0, 5.0 MHz
  - Harmonic Frequency : 4.0, 5.0 MHz
  - Doppler Frequency : 2.5, 3.3 MHz
  - CW Doppler Frequency : 2.5 MHz

Biopsy Guide Available: Multi Angle, Reusable

- 7S Wide Band Phased Array Sector Probe
  - Applications: Cardiac, Pediatrics, Abdomen
  - Probe Band Width : 3 – 8 MHz
  - Number of Element : 96
  - FOV (Max) : 90°
  - Physical Foot Print : 14 x 7 mm
  - B-mode Imaging Frequency : 5.0,
  - 6.0, 7.0 MHz
  - Harmonic Frequency : 6.0, 7.0, 8.0,
  - 8.5 MHz
  - Doppler Frequency : 4.0, 5.0 MHz
  - CW Doppler Frequency : 4.0 MHz
  - Biopsy Guide Available : None

- 3Sp Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Trancranial, Abdomen
  - Probe Band Width : 1.5 – 5MHz
  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 16 x 14 mm
  - B-mode Imaging Frequency : 2.0,
  - 3.0, 4.0, 5.0 MHz
  - Harmonic Frequency : 3.0, 3.5, 4.0,
  - 5.0, 5.5 MHz
  - Doppler Frequency : 1.8, 2.0, 2.5,
  - 3.3, 4.0 MHz
  - CW Doppler Frequency : 2.0 MHz

Biopsy Guide Available: Multi Angle, Reusable

- 5Sp Wide Band Phased Array Sector Probe
  - Applications : Cardiac, Trancranial, Abdomen

Probe Band Width : 2.0 – 8.0 MHz

  - Number of Element : 64
  - FOV (Max) : 90°
  - Physical Foot Print : 10 x 10 mm
  - B-mode Imaging Frequency : 4.0,
  - 5.0, 6.7, 8.0 MHz
  - Harmonic Frequency : 5.0, 6.0, 8.0,
  - 10.0 MHz
  - Doppler Frequency : 2.7, 3.0, 3.3
  - 4.0, 5.0 MHz
  - CW Doppler Frequency : 2.5 MHz

Biopsy Guide Available: Multi Angle, Reusable

- i12L Intraoperative Wide Band Linear Probe
  - Applications : Intraoperative, Small
  - Parts, Vascular, Pediatrics
  - Probe Band Width : 4 – 12 MHz
  - Number of Element : 96
  - FOV (Max) : 25 mm
  - Physical Foot Print : 29 x 10 mm
  - B-mode Imaging Frequency : 6.0,
  - 8.0, 10.0 MHz
  - Harmonic Frequency : 10.0,
  - 12.0MHz
  - Doppler Frequency : 5.0, 6.7 MHz
  - Steered Angle : +/- 5, 10, 15, 20°
  - Biopsy Guide Available : None

- t739 Intraoperative Wide Band Linear Probe
  - Applications : Intraoperative, Small Parts, Vascular, Pediatrics
  - Probe Band Width : 4 -10 MHz
  - Number of Element: 192
  - FOV (Max) : 39 mm

- Physical Foot Print : 39 x 10 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0,
- 12.0 MHz
- Doppler Frequency : 5.0, 6.7 MHz
- Steered Angle : +/- 5, 10, 15, 20°
- Biopsy Guide Available : Multi
- Angle, Reusable

• i739 Intraoperative Wide Band Linear Probe
- Applications : Intraoperative, Small
- Parts, Vascular, Pediatrics
- Probe Band Width : 4 – 10 MHz
- Number of Element: 192
- FOV (Max) : 39 mm
- Physical Foot Print : 39 x 10 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0,
- 12.0 MHz
- Doppler Frequency : 5.0, 6.7 MHz
- Steered Angle : +/- 5, 10, 15, 20°

Biopsy Guide Available : None

• BE9C Wide Band Biplane Microconvex Probe
- Applications: Urology, Endocavity
- Probe Band Width : 4 – 11MHz
- Number of Element : 96 x 2
- Convex Radius : 9 mmR
- FOV (Max) : 127°
- Physical Foot Print : 20 x 5 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0
- MHz
- Doppler Frequency : 4.0, 5.0 MHz
- Biopsy Guide Available : Single Angle Reusable (stainless steel), Disposable

• BE9CS Wide Band Biplane Microconvex Probe
- Applications: Urology, Endocavity
- Probe Band Width : 4 – 11MHz
- Number of Element : 96 x 2
- Convex Radius : 9 mmR
- FOV (Max) : 127°
- Physical Foot Print : 20 x 10 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0
- MHz
- Doppler Frequency : 4.0, 5.0 MHz
- Biopsy Guide Available : Single Angle Reusable (stainless steel), Disposable

• ERB Wide Band Biplane Probe
- Applications: Urology
- Probe Band Width:
  ERB Linear5 – 10 MHz
  ERB Convex: 5 - 9MHz
- Number of Element: 128
- FOV (Max) :
  ERB Linear: 51mm
  ERB Convex: 123°
- Physical Foot Print:
  ERB Linear: 51 x 5 mm
  ERB Convex: 17 x 5.5 mm
- B-mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
- Harmonic Frequency: 8.0, 10.0 MHz
- Doppler Frequency: 5.0, 6.7 MHz
- Biopsy Guide Available: Multi Angle, Grid Reusable

• 4D3C-L Convex Volume Probe
- Applications : Abdomen, OB Gyn
- Probe Band Width : 2 – 5 MHz
- Number of Element: 192
- Convex Radius : 39.1 mmR
- Volume Sweep Radius: 19.8 mmR
- FOV: 87° Volume 85° x 80°
- Physical Foot Print : 60 x 13 mm
- B-mode Imaging Frequency : 3.0,
- 4.0, 5.0 MHz
- Harmonic Frequency : 4.0, 4.5, 4.8,
- .0 MHz
- Doppler Frequency : 2.5, 3.3 MHz
- Biopsy Guide Available : Single Angle, Reusable (stainless steel, plastic)

• 4D8C Micro Convex Volume Probe
- Applications : Neonatal, Pediatrics
- Probe Band Width : 4 – 11 MHz
- Number of Element: 192
- Convex Radius : 14.0 mmR
- Volume Sweep Radius: 80 mm
- FOV: 120° Volume 37.4 mm x 29°
- Physical Foot Print : 30 x 50 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0,
- 1.0 MHz
- Doppler Frequency : 4.0, 5.0 MHz
- Biopsy Guide Available : Single Angle Reusable(stainless steel, plastic)

• 4DE7C Convex Volume Probe
- Applications : OB Gyn, Urology
- Probe Band Width : 4 – 11 MHz
- Number of Element: 192
- Convex Radius: 10.1 mmR
- Volume Sweep Radius: 11.6 mmR
- FOV: 133° Volume 146° x 90°
- Physical Foot Print : 27 x 6 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0,
- 11.0 MHz
- Doppler Frequency : 4.0, 5.0 MHz
- Biopsy Guide Available : Single Angle, Reusable (stainless steel)

• P2D Non-imaging Single CW Doppler Pencil Probe
- Applications : Cardiac
- Frequency: 2.0 MHz

• P6D Non-imaging Single CW Doppler Pencil Probe
- Applications : Cardiac, Vascular, Pediatric
- Frequency: 5.0 MHz

• UG7C Gastro Probe – Europe Only
- Applications Transesophageal, Stomach
- Probe Band Width : 4.5 – 10MHz
- Number of Element: 128
- Convex Radius: 8.5 mmR
- FOV (Max) : 125°
- Physical Foot Print : 19 x 5 mm
- B-mode Imaging Frequency : 6.0,
- 8.0, 10.0 MHz
- Harmonic Frequency : 8.0, 10.0
- MHz
- Doppler Frequency : 5.0, 6.7 MHz
- Biopsy Guide Available: None

* available only in Europe

Inputs and Outputs

- Video In
  - S-Video
- Video Out
  - S-Video
- Audio Stereo In
- VGA out
- Connectors
  - Footswitch
  - USB (6)
  - Ethernet
  - Power for Peripherals

Safety Conformance

The LOGIQ P5 is:

- Listed to UL 60601-1 by a Nationally Recognized Test Lab
- Certified to CAN/CSA C22.2 601.1 by an SCC accredited Test Lab
- CE Marked to Council Directive 93/42/EEC on Medical Devices
- Conforms to the following standards for safety:
  - -IEC/EN 60601-1 Medical Electrical equipment, General requirement for Safety
  - -IEC/EN 60601-1-1 Safety requirements for Medical Electrical Systems
  - -IEC/EN 60601-1-2 Electromagnetic compatibility
  - -IEC/EN 60601-1-4 Programmable medical systems
  - -IEC/EN 60601-2-37 Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
  - -IEC 61157 Declaration of acoustic output
  - -ISO 10993 Biological evaluation of medical devices
  - ·NEMA UD3 Acoustic output display (MI, TIS, TIB, TIC)

GE Healthcare. - America: 888-202-5528 P.O Box 414, Milwaukee , Wisconsin 53201 USA

GE Healthcare , GE Asia Technology Park
3rd Floor, Building 1,1 Hua Tuo Road ,
Shanghai – 201203
Tel : +86 21 38774000

GE Ultraschall Deutschland GmbH & Co KG
Beethovenstr. 239, D-42655 Solingen
Tel.: (+49) 212-2802-0
Fax: (+49) 212-2802-28

Internet : www.gehealthcare.com

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